PROJECT: AC-DC DIFFERENCE STANDARDS AND MEASUREMENT TECHNIQUES

Electronic Instrumentation and Metrology Group

FY01 FUNDING SOURCES:

STRS:	$200k
OA: CCG/AF:	$ 35k
OA: CCG/AF:	$ 80k
Calibration Fees:	$150k estimated

STAFF:

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AC-DC Thermal Transfer Standards provide the basis for measurement of ac quantities – voltage, current and power

This project is responsible for:

- Creation, maintenance and characterization of Primary, Reference and Working Standards

- Construction of Comparator Systems and writing of Operating Software

- Research into new standards and improved techniques –
  - Cryogenic transfer standard as possible new primary standard
  - Thin-film multijunction thermal converters as new high performance reference and working standards
  - Expansion of parameter space for broadband calibrations of shunts up to 100 A and down to 10 μA
  - Independent verification of converters up to 1 kV using binary inductive divider

- Meeting customer needs
  - Close working relationships with PMI, Metrology Ins., Fluke, Holt, Julie, Air Force, Sandia
  - Capabilities do exist to meet customers needs
  - Dissemination to customers through ≈10 test reports with 300 – 400 test points per year
  - Results used for accreditation (e.g. Fluke), product development (e.g. PMI, Metrology Ins., Clarke-Hess), expansion of calibration capability (e.g. Air Force)

- Facilities and equipment are sufficient to perform required work, but retired staff not yet replaced
- Support provided for DMM calibration, Div 814 ac Josephson, Div 813 RF-dc calibrations

- International activities – just finished CCEM-K9, 200 V – 1 kV, 1 kHz – 100 kHz; bilateral with NRC, 1 V – 3 V, 10 Hz – 1 MHz; calibrations for INMETRO and CENAM